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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,519	02/19/2002	Tadashi Enomoto	49677-112	1687
7590	10/27/2004			
McDERMOTT, WILL & EMERY 600 13th Street, N.W. Washington, DC 20005-3096			EXAMINER HOFFMANN, JOHN M	
			ART UNIT	PAPER NUMBER
			1731	

DATE MAILED: 10/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/076,519

Applicant(s)

ENOMOTO ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nouchi 5675690 or Grubb 6118575 in view of Powers 4378985, Terasawa 6295843, Watanabe 4915717, and Oyamada 6145344.

Nouchi (at col. 4, line 13) and Grubb (at fig 2 and col. 5, lines 43 and 50-57) disclose fibers which have thicknesses/diameters which correspond to those claimed. However, there is no indication of the forming of the preforms as claimed. The secondary references disclose making preforms in the manner claimed: see Oyamada figure 1; Powers, figure 4; Terasawa figure 7A, and Watanabe figure 1. IT would have been obvious to use any of those prior art methods to make the Nouchi or Grubb fibers – because they are well known methods for making fibers and for any of their well known advantages.

Alternatively, one can use Nouchi or Grubb as secondary references as follows. Oyamada, Powers, Terasawa and Watanabe disclose the making of the fibers – but not any particular dimensions. It would have been obvious to use the Nouchi or Grubb profiles in the process, for the distinct optical properties that Nouchi and Grubb disclose.

It would have been further obvious to make the preform layers in the same diameter ratios as desired in the final product. For example Nouchi has a fiber with diameters of 2.1, 4.2, and 8.4 diameters (i.e. a ratio of 1:2:4). One would make a preform with diameters/thicknesses with that same 1:2:4 ratio – because conservation of mass would dictate that too have the final ratio, one would start out with the same ratio. It is noted, that such assumes that each feature has the same density, because if the densities were different, when the soot bodies are sintered, there would be different shrinkages. But since the references uses substantially identical deposition techniques for each burner, one would expect substantially identical densities.

As a specific example of the combination: Teresawa's figure 7A and Nouchi, col 4, line 13: 112, 122, 132 and 212 (all of Teresawa) would correspond respectively with r_{21} , r_{22} , r_{23} and r_{24} of Nouchi. If glass rod 112 had a diameter of x , primary soot preform 122 would have a diameter of $2x$, and the secondary soot preform 212 would have a diameter of $4x$. The ratios of diameters would be $(2x/x)=2$ and the ratio of thicknesses would be $4x/2x = 2$.

It is noted that Nouchi also has a diameter of 7.06. This is not very relevant because the claims are comprising in nature thus do not preclude such.

Claim 2 is clearly met.

Claim 3: See figure 5 (and the associated text) of Oyamada (and even figures 4-5 of Watanabe). Those figures show openings of different diameters. Thus using duplicate burners, there the secondary burner would have at least one opening diameter that is larger than at least one opening diameter of the primary burner.

Claim 5: as per Oyamada, col. 6, lines 13-19: the angle with the horizontal should not exceed 60 degrees and is not pointed downwards – this corresponds to the claimed angle of 30 –90. Regardless, it is clear that the burner angle is a result-effective variable. It would have been obvious to perform routine experimentation to determine the optimal burner angle. It is also noted that figure 7A of Teresawa shows all burners that are about 45 degrees.

As to claim 6: as can be seen from figure 4 of Powers, the two burners 60 and 62 can be separated by a distance. In fact, it would have been obvious to have the burners at some distance from each other, so as to prevent the burners from interfering with each other. It would have been obvious to have the burners (as well as the centers of the expanses as far as part as one desires, with no new or unexpected results.

As to claim 7: it would have been obvious to terminate the lower burner prior to terminating the upper burner, because one has to make the inner layers prior to depositing the outer layers – otherwise there is nothing to deposit the outer layers upon. And there would be no reason to continue making the inner cores longer than what is needed – such would only add cost.

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nouchi 5675690 or Grubb 6118575 in view of Powers 4378985, Terasawa 6295843, Watanabe 4915717, and Oyamada 6145344 as applied to claim 1 above, and further in view of Cain 5599371.

The initial references don't disclose the diameters. Cain discloses (figure 3) a high precision burner that can be used with non-chlorine (a poisonous and corrosive element) reactant. It would have been obvious to use Cain burners as the specific burners – for the advantages that Cain discloses. Claim 4: See col. 6, lines 35-36: which discloses one diameter of 17 mm and another of 7.9 mm. This would have a ratio between 2 and 5.

Information Disclosure Statement

The information disclosure statement filed 11/August 2004 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Response to Arguments

Applicant's arguments filed 27 September 2004 have been fully considered but they are not persuasive.

It is argued that the primary references involve forming a first soot layer employing a second layer on the outer periphery of a soot by a first burner, or a technique of forming only one soot layer. This is not a convincing argument because

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the secondary references teach this aspect of the invention. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

It is further argued that the rejection of claims 5-6 is improper because drawings are not drawn to scale. This is not convincing because the rejection does not rely exclusively on any assertion that the drawings are to scale. However, it does suggest the claim angle. Relative positions is something that can be derived from drawings.

It is further argued that Examiner has not established that it is known that the angle is an art-recognized result effective variable. This is not agreed with. The rejection points to col. 6, lines 13-19 of Oyamada which clearly indicates that the angle is an "important" feature and that some angles are essentially inoperable.

Regarding claim 4 it is argued that the Office did not point out the ratio of the diameter openings. The rejection clearly points out where such is disclosed in Cain.

It is further argued that the Office did not establish that the open diameters are result-effective variables. This is not very relevant because the rejection does not suggest any modification of or doing any optimization of diameters. The motivation for using the Cain burner is indicated in the rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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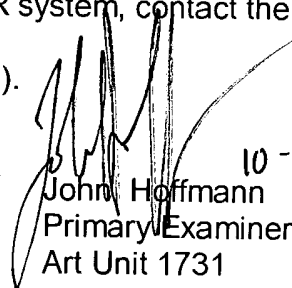
§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


10-25-01
John Hoffmann
Primary Examiner
Art Unit 1731

jmh